

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 27. (Cancelled)

28. (Currently Amended) A nuclear power plant system comprising:

a nuclear reactor;

a steam turbine that uses steam generated in a pressure vessel included in the nuclear reactor; and

a radioactive material separating and removing apparatus placed on corrugated plates of a dryer arranged in the pressure vessel, or placed in a steam passage extended between the pressure vessel and an inlet of the steam turbine, the radioactive material separating and removing apparatus including a surface having superhigh hydrophilic ~~TiO₂~~ TiO₂ and adapted to trap thereon radioactive corrosion products contained in a plurality of water drops so that the radioactive corrosion products firmly adhere on the surface, in order to separate and remove radioactive corrosion products from the plurality of water drops.

29. (Currently Amended) A nuclear power plant system comprising:

a nuclear reactor having a pressure vessel which generates steam therein;

a steam turbine that uses the steam generated by the nuclear reactor; and

a dryer arranged in the pressure vessel to dry the steam to be supplied to the steam turbine, the dryer having a plurality of corrugated plates defining therebetween passages through which a multiphase flow containing the steam, water drops and radioactive substances flows, wherein the corrugated plates have surfaces having superhigh hydrophilic ~~TiO₂~~ TiO₂.

30. (Currently Amended) The nuclear power plant system according to claim 29, wherein the superhigh hydrophilic ~~TiO₂~~ TiO₂ is formed in fiber.

31. (Currently Amended) The nuclear power plant system according to claim 29, wherein the surface of the corrugated plates are coated with a coating containing ~~TiO₂~~ TiO₂ and ~~SiO₂~~ SiO₂.

32. (Currently Amended) The nuclear power plant system according to claim 29, wherein each of the corrugated plates includes thereon a p-type oxide film and the superhigh hydrophilic ~~TiO₂~~ TiO₂ is a coating on the p-type oxide film, and wherein the superhigh hydrophilic ~~TiO₂~~ TiO₂ is an n-type oxide.

33. (Previously Presented) The nuclear power plant system according to claim 29, wherein the dryer is provided with a means for creating an electric field or a magnetic field between adjacent corrugated plates, adapted so that minute radioactive particles contained in the multiphase flow are biased toward the corrugated plates by the electric field or the magnetic field.

34. (Currently Amended) The nuclear power plant system according to claim 33, wherein the means for creating an electric field or a magnetic field comprises a photocell including:

~~the an~~ n-type semiconductor, which is the superhigh hydrophilic ~~TiO₂~~ TiO₂ deposited on the corrugated plates; and

a film of a corrosion product, which is a p-type semiconductor, produced by a corrosion of surfaces of the corrugated plates.